

Communicate Knowledge Crosscutting Process

Mission

NASA communicates knowledge by coordinating, managing and sharing information and experiences related to the content, relevance, results, applications, and excitement of NASA's mission. The Communicate Knowledge (CK) process facilitates the distribution of information on NASA's missions and discoveries. It ensures increased public understanding of science and technology, promotes the application of NASA-generated information, and inspires achievement and innovation. The process ensures that knowledge derived from NASA research programs is available to meet the specific needs and interests of constituent groups. It begins at the inception of a research project and increases in intensity as the effort reaches maturity to ensure the appropriate delivery, archiving, and future convenient access of all research results. The goal of the Communicate Knowledge Process is to ensure that NASA's customers (including scientists and technologists around the world, companies and innovators, educators, publishers, museums, the media, and every citizen) receive information derived from the Agency's efforts in a timely and useful form.

Implementation Strategy

The Agency will work to expose more people to the activities of NASA's Aeronautics and Space programs by maintaining an exhibits loan service, a fine-arts program, and by providing live satellite interviews with astronauts, program managers, and other Agency officials. Through increased availability of documentation and digital images, the Agency will provide scientists and the public greater access to NASA generated knowledge. Scientific Technical Information (STI) is a service that provides for collection, organization, and archiving of NASA's STI and as such, is a unique resource to the public. The Agency will also improve utility of NASA World Wide Web pages and ease of locating areas of interest - based on the public's demand. NASA will increase the opportunities for transferring technology to private industry and the public through the Internet using the *NASA TechTracS* database, by producing a series of technology publications, and by attending industry specific conferences and trade shows. The Agency involves the educational community in its endeavors to inspire America's students, create learning opportunities, and enlighten inquisitive minds. This will be accomplished by providing opportunities for students and educators at all levels to become involved in our mission; providing excellent and valuable education programs and services as judged by our customer, the education community; increasing the number of sites that offer science and engineering curriculum to the underrepresented and minority students; and increasing the involvement of minority universities through sponsored research projects.

The Objectives described in the NASA Strategic Plan for this cross-cutting process are:

- Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable
- Disseminate scientific information generated by NASA programs to our customers
- Transfer NASA technologies and innovations to private industry and the public sector
- Support the Nation's education goals

Performance Measures

The Agency has defined 4 CK Annual Performance Goals for Fiscal Year 2002. Each goal has specific indicators that will provide a quantitative manner to measure performance. The goals are listed in the text below.

Goal: Ensure that NASA's customers receive information from the Agency's efforts in a timely and useful form.

Objective: Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable.

Public Benefit: American citizens can experience NASA in ways that are meaningful and useful to them, by participating in NASA supported events.

Annual Performance Goal 2CK1: Share the experience of expanding the frontiers of air and space with the public and other stakeholders by meeting 4 of the 5 indicators for this goal.

- More Americans can visit a NASA exhibit, through a minimum of 350 events per year.
- Public attendance and participation in the NASA Art Program will increase, through exhibitions in 15 additional states.
- Agency officials and astronauts will convey clear information on NASA activities through the most used media in America: television, through no less than 20 live shots per month on average.
- NASA's activities and achievements will be chronicled and put into perspective for the American public, through 10 new historical publication.
- Documents significant in the Agency's history will be made available to a larger audience by producing one, new electronic document – a CD/ROM.

Objective: Disseminate scientific information generated by NASA programs to our customers.

Public Benefit: The public will have greater access to increased, relevant and understandable scientific information, which will enable them to share in the excitement of discovery.

Annual Performance Goal 2CK2: Inform, provide status, enthuse, and explain results, relevance and benefits of NASA's programs by meeting 2 of the 3 indicators for this goal.

- Effective use of the NASA Home Page to communicate knowledge about NASA's scientific and technological achievements to the public. Effectiveness will be rated by placing at least 50 stories about breaking news on science and technology discoveries.
- The History Office will create one additional on-line exhibit on the NASA History Web page.
- The History Office will meet the need for a timely and effective response to the public by meeting or exceeding 90% of the time a 15-day response standard.

Objective: Transfer NASA technologies and innovations to private industry and the public sector.

Public Benefit: General and targeted members of the public can benefit economically as well as intellectually through clear, effective communications concerning the Agency's activities.

Annual Performance Goal 2CK3: Ensure consistent, high-quality, external communication by meeting 3 of the 4 indicators for this goal.

- Effectively communicate technologies available for commercial use and technologies that have been commercialized by industry, through specific publications. Effectiveness will be measured by monitoring print and electronic distribution.
- Publish at least one industry specific, special edition of *Aerospace Technology Innovation* issue in FY 2002, to attract new readership and encourage partnerships with targeted industry sectors.
- Carry out effective NASA technology transfer market outreach to the medical device industry.
- The *NASA TechTracS* database, accessible through the Internet, will list at least 18,000 NASA technologies that are considered to be of benefit to U.S. industry and the public.

Objective: Support the Nation's education goals.

Public Benefit: The general public will have increased learning opportunities in science and technology fields through NASA sponsored programs.

Annual Performance Goal 2CK4: Using NASA's unique resources (mission, people, and facilities) to support educational excellence for all, NASA supports the Nation's education goals by meeting 3 of the 4 indicators for this performance goal.

- Provide excellent and valuable educational programs and services, maintaining an "excellence" customer service rating ranging between 4.3 and 5.0 (on a 5.0 scale) 90% of the time.
- NASA will involve the educational community in its endeavors, maintaining a level of involvement of approximately 3 million participants which include teachers, faculty, and students.
- Through meaningful partnerships, NASA will increase the amount of total funding obligation from the FY 2000 baseline for Historically Black Colleges and Universities and Other Minority Universities.
- NASA will establish an undergraduate scholarship program beginning in FY 2002.

Verification and Validation

Performance plan goals and indicators are subject to audit by internal and external groups. Thus, there needs to be a set of processes to document the metrics. Due to the broad nature of the Communicate Knowledge crosscutting process, there is a broad array of methods to verify and validate the reported metric data. These methods include the following:

- 1) Monthly reports from Field Centers.
- 2) Automatic built in statistics gathering software (web statistics).
- 3) On-air records & reports from NASA Field Centers television producers.
- 4) Field Center reports and commercially acquired video monitoring report from Burrelles.
- 5) Count of publications (History Office).
- 6) *Innovations* mail list and electronic subscription request file, recorded inventory and distribution request, and monitored Web site hits.
- 7) EDCATS has a multi-layered process to verify the accuracy and quality of the data collected.
 - a) Each program manager has access to rollup reports and to raw data, which identify the total number of records, the name of the reporter or participant, and a summary of the data. Thus, duplicate records can be identified, checked, and removed or corrected, or missing data sets can be identified and the reporter notified that they must complete their reports.
 - b) Each NASA-wide program manager and Center or Enterprise point of contact has access to a report which compiles all the records entered for their area of responsibility, so they can access the status of their specific program records and thus work with the program managers to correct errors or provide for missing reports. These “roll up” reports also provide data at a level of detail which permits the kind of visibility that can highlight implausible numbers so that action can be taken to make corrections where needed.
 - c) The EDCATS Program Manager has access to all levels of data and checks the status of data at the program level regularly, working with Agency points of contact and/or program managers to ensure the quality of data. The EDCATS software developer also checks the data and informs the EDCATS Program Manager of anomalies or suspected problems.
- 8) *NASA TechTracS* - The review of new technology reports and authorization for release to the public is carried out by each Center's patent counsel. A set of written procedures for this process is available upon request. The actual implementation of a release is controlled automatically when the "release to public" data field in each Centers' *TechTracS* is set to yes. Access to this data field is tightly controlled by each Center.
- 9) Metric data is collected by contractor as part of the contract report. Improvements are verified by a NASA representative of the STI Program Office, Principal Center for the STI Program.
- 10) On-site visits.

- 11) Counters on the web pages, reports on the numbers of information requests, monthly activity reports, e-mails, memos, letters, press releases, publications, and the NASA History Program Review which takes place each year. There is some limitation to this data in the sense that the web page counters do not document why an individual accesses the web page.
- 12) Listings of events, activities and products are available on the Internet. The NASA Web site, <http://www.nasa.gov/>, is updated daily and provides to the general public information about the most interesting information about the Agency. This Web site is the "hub" for the other NASA Web sites and provides links to all other areas of the agency. For example, there is a link to the Space Science Web site, <http://spacescience.nasa.gov/>, an excellent location updated daily with the latest news, pictures of space, and education activities. In addition to links to the NASA enterprises, the main NASA Web site also contains links to areas such as the education programs, the history office, human resources, research opportunities, and business opportunities. The Education Programs Web site (<http://education.nasa.gov/>), for example, provides to the visitor user-friendly activity calendars, and educational products and resources. Each field center also offers a central Web site with numerous links to activities, events, and products specific to the area of excellence that distinguishes each Center.
- 13) Reports from the NASA Centers regarding their imagery additions for the year.
- 14) Data are collected from participants in Agencywide, Enterprise, and Center education programs via an on-line data collection system. Program participants have the opportunity to rate our programs by answering a series of questions including, would they recommend the program to others; how would they rate the staff; do they expect to apply what was learned; and was the program a valuable experience. The ratings provided on these questions are then used to create an "overall average for excellence."

MULTI-YEAR PERFORMANCE TREND
Communicate Knowledge Crosscutting Process

Improve the external constituent communities' knowledge, understanding, and use of the results and opportunities associated with NASA programs (FY 1999, 2000, and 2001)/Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #	CK9: Produce 10 new publications chronicling and placing NASA's activities and achievements in perspective for the American public. Sponsor or co-sponsor one major scholarly conference.	OC3: Produce 12 new historical publications chronicling and placing NASA's activities and achievements in perspective for the American public.	1CK1: Share the experience of expanding the frontiers of air and space with the public and other stakeholders by meeting 5 of the 6 indicators for this target.	2CK1: Share the experience of expanding the frontiers of air and space with the public and other stakeholders by meeting 4 of the 5 indicators for this goal.
Assessment	Blue	Green	TBD	TBD
Annual Performance Goal and APG #	CK10: Acquire 10,550 NASA-sponsored, -funded and/or -generated report documents for the American scientific community and public, publish 26 issues of an electronic current awareness product to announce additions to the NASA STI database, and add 24,400 bibliographic/ citation records to the online NASA STI data base.			
Assessment	Blue			

Improve the external constituent communities' knowledge, understanding, and use of the results and opportunities associated with NASA programs (FY 1999, 2000, and 2001)/Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #		0C12: The Office of Public Affairs is acquiring the capability to provide the media with digital, high-definition video when the broadcasting industry converts to digital broadcasting in the next decade. It will also add a searchable online digital version of the NASA Headquarters photo archive to the NASA Home Page.		
Assessment		Green		
Annual Performance Goal and APG #		0C13: The Office of Public Affairs will open exhibits to new audiences. A series of new exhibits with updated information on the Agency's four Enterprises will begin circulation. New Internet sites to inform the public of exhibits available for loan will expedite the loan process and attract new audiences. Two NASA Centers will create new exhibits and renovate visitor facilities to attract and accommodate additional visitors.	*Captured in APG (1CK1)	*Captured in APG (2CK1)
Assessment		Green		

Improve the external constituent communities' knowledge, understanding, and use of the results and opportunities associated with NASA programs (FY 1999, 2000, and 2001)/Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #		0C19: Maintain a baseline for live satellite interview programs of no less than 10 live shots per month.	*Captured in APG (1CK1)	*Captured in APG (2CK1)
Assessment		Blue		
Annual Performance Goal and APG #		0C20: Maintain a baseline of 5 Video File elements per week, issuing raw video and animation daily on NASA TV.		*Captured in (2CK1)
Assessment		Blue		
Annual Performance Goal and APG #		0C4: Increase the NASA-sponsored, funded, or generated report documents for the scientific community and public from 11,600 to 13,920.	*Captured in APG (1CK1)	*Captured in APG (2CK1)
Assessment		Blue		
Annual Performance Goal and APG #		0C16: Increase the nontraditional NASA-sponsored scientific and technical information through the NASA Image exchange (NIX) digital image database from 300,000 in FY98 to more than 470,000 in FY00.	*Captured in APG (1CK1)	
Assessment		Green		

Improve the external constituent communities' knowledge, understanding, and use of the results and opportunities associated with NASA programs (FY 1999, 2000, and 2001)/Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #		0C14: The History Office will target high school students through the use of a History Day competition on "Science, Technology, and Invention." The contest is being conducted in concert with the History Day Organization, with co-sponsored teacher workshops at every NASA Center.		
Assessment		Red		
Annual Performance Goal and APG #		0C6: The Office of Scientific and Technical Information Program plans to improve the NASA Image exchange (NIX) meat-search engine accessing all NASA digital image databases, adding Quick-Time, video, animation, and browse categories on NASA's key topics of interest to customers.		
Assessment		Green		

Improve the external constituent communities' knowledge, understanding, and use of the results and opportunities associated with NASA programs (FY 1999, 2000, and 2001)/Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #		Increase the number of searched pages in NASA Web space by 5% per year, relative to the FY99 baseline. (0C17)	Inform, provide status, enthuse, and explain results, relevance and benefits of NASA's programs by meeting 2 of the 3 indicators for this target. (1CK2)	Inform, provide status, enthuse, and explain results, relevance and benefits of NASA's programs by meeting 2 of the 3 indicators for this goal. (2CK2)
Assessment		Blue	TBD	TBD
Annual Performance Goal and APG #		Increase the capacity of the NASA Home Page to meet public demand by providing for a 5% per year increase in download capacity, using FY99 figures as a baseline. (0C18)	*Captured in APG (1CK2)	*Captured in APG (2CK2)
Assessment		Blue		
Annual Performance Goal and APG #		Provide the public with internal access to listings of (1) existing and upcoming communications events, activities, and products and (2) best communications practices within NASA. (0C7)		
Assessment		Red		

Improve the external constituent communities' knowledge, understanding, and use of the results and opportunities associated with NASA programs (FY 1999, 2000, and 2001)/Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #		0C21: Provide publications that will communicate technologies available for commercial use and technologies that have been commercialized by industry to facilitate technology transfer. The three principal publications are <i>Innovations</i> , (12,000), <i>Spin-off</i> (50,000), and <i>Tech Briefs</i> (205,000), whose effectiveness will be measured by monitoring readership and frequency of use as a source of reference.	Ensure consistent, high-quality, external communication by meeting 2 of the 3 indicators for this target. (1CK3)	Ensure consistent, high-quality, external communication by meeting 3 of the 4 indicators for this goal. (2CK3)
Assessment		Green		
Annual Performance Goal and APG #		0C22: Publish at least 1 industry specific <i>Aerospace Technology Innovation</i> issue per year.	*Captured in APG (1CK3)	*Captured in APG (2CK3)
Assessment		Blue		

Improve the external constituent communities' knowledge, understanding, and use of the results and opportunities associated with NASA programs (FY 1999, 2000, and 2001)/Share with the public the knowledge and excitement of NASA's programs in a form that is readily understandable (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #		0C15: The Office of Aero-Space Technology's <i>Aerospace Technology Innovation</i> Publication will be targeting medical facilities for new readership, as well as the automotive industry for new technology transfer opportunities. The organization will attend the Society for Automotive Engineers annual tradeshow in Detroit, Michigan.		*Captured in APG (2CK3)
Assessment		Red		

Highlight existing and identify new opportunities for NASA's customers, including the public, the academic community, and the Nation's students, to directly participate in space research and discovery.

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #	CK1: Increase the number of educators who participate annually in NEWEST/NEWMAS(T) to 500 from 400 in FY 98.			
Assessment	Green			

Highlight existing and identify new opportunities for NASA's customers, including the public, the academic community, and the Nation's students, to directly participate in space research and discovery.

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #	CK2: Increase the number of students reached through the NEWEST/NEWMASST program to 42,000 students from 33,600 in FY 98.			
Assessment	Green			

Highlight existing and identify new opportunities for NASA's customers, including the public, the academic community, and the Nation's students, to directly participate in space research and discovery (FY 1999, 2000, and 2001)/Support the Nation's education goals (FY 2002).

Annual Performance Goal and APG #	CK3: Maintain the participation level in Agency-wide educational programs at more than 1 million teachers and students.	0C1: Seek to maintain a level of participation involvement of approximately 3 million with teachers, faculty, and students in the education community.	1CK4: Use NASA's ability to support meeting the Nation's education goals by meeting 3 of the 4 indicators for this target.	2CK4: Using NASA's unique resources (mission, people, facilities) to support educational excellence for all, NASA supports the Nation's education goals by meeting 3 of the 4 indicators for this performance goal.
Assessment	Blue	Blue	TBD	TBD

Highlight existing and identify new opportunities for NASA's customers, including the public, the academic community, and the Nation's students, to directly participate in space research and discovery (FY 1999, 2000 and 2001)/Transfer NASA technologies and innovations to private industry and the public sector (FY 2002).

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Annual Performance Goal and APG #	CK12: Increase new technology opportunities from 19,600 to 19,700. These will be made available to the public through the NASA TechTracs database and will be measured by monitoring a controlled data field that indicates the number of new technologies communicated to the public.	0C9: Increase new opportunities to transfer technology developed at NASA to private industry from 19,600 to 19,800. These opportunities will be made available to the public through the NASA TechTracs database and will be measured by monitoring a controlled data field that indicates the number of new technologies communicated to the public.	*Captured in APG (1CK3)	*Captured in (2CK3)
Assessment	Blue	Green		
Annual Performance Goal and APG #		0C10: Assist customers who use the STI Help Desk and the NASA Image exchange (NIX) digital image database within a specific turnaround period.	*Captured in APG (1CK2)	
Assessment		Green		
Annual Performance Goal and APG #		Support no less than 800 portable exhibit loans and send portable exhibits to a minimum of 175 targeted events per year. (0C11)		
Assessment		Blue		

Communicate Knowledge FY 2002								
	Budget Category	Space Science *	Earth Science *	Biological and Physical Research	HEDS *	Aero-Space Technology *	Academic Programs	Research & Program Management
Annual Performance Goal and APG#								
Share the experience of expanding the frontiers of air and space with the public and other stakeholders by meeting 4 of the 5 indicators for this goal. (2CK1)		x	x	x	x	x		x
Inform, provide status, enthuse, and explain results, relevance and benefits of NASA's programs by meeting 2 of the 3 indicators for this goal. (2CK2)		x	x	x	x	x		x
Ensure consistent, high-quality, external communication by meeting 3 of the 4 indicators for this goal. (2CK3)						x		
Using NASA's unique resources (mission, people, and facilities) to support educational excellence for all, NASA supports the Nation's education goals by meeting 3 of the 4 indicators for this performance goal. (2CK4)		x	x	x	x	x	x	

* The Enterprises also have specific APGs and indicators dealing with Communicating Knowledge.